Vendor: Cisco

Exam Code: 642-691

Exam Name: CCIP BGP + MPLS Exam (BGP + MPLS)

Version: Demo

QUESTION NO: 1

For which purpose is the command mpls ldp maxhops used?

A. In large ATM-MPLS networks, the LFIB can become too large and it may be necessary to limit the maximum diameter of the MPLS LSPs.
B. Because downstream-on-demand label allocation uses hop count to control loop detection, it maybe necessary to limit the maximum diameter of the MPLS network.
C. Because end-to-end delay can cause problems with some voice applications, it may be necessary to limit the maximum diameter of the MPLS network.
D. When interconnecting large frame mode MPLS and cell mode networks it may be necessary to limit the maximum network diameter to prevent forwarding loops.

Answer: B
Explanation:

QUESTION NO: 2

Refer to the diagram.
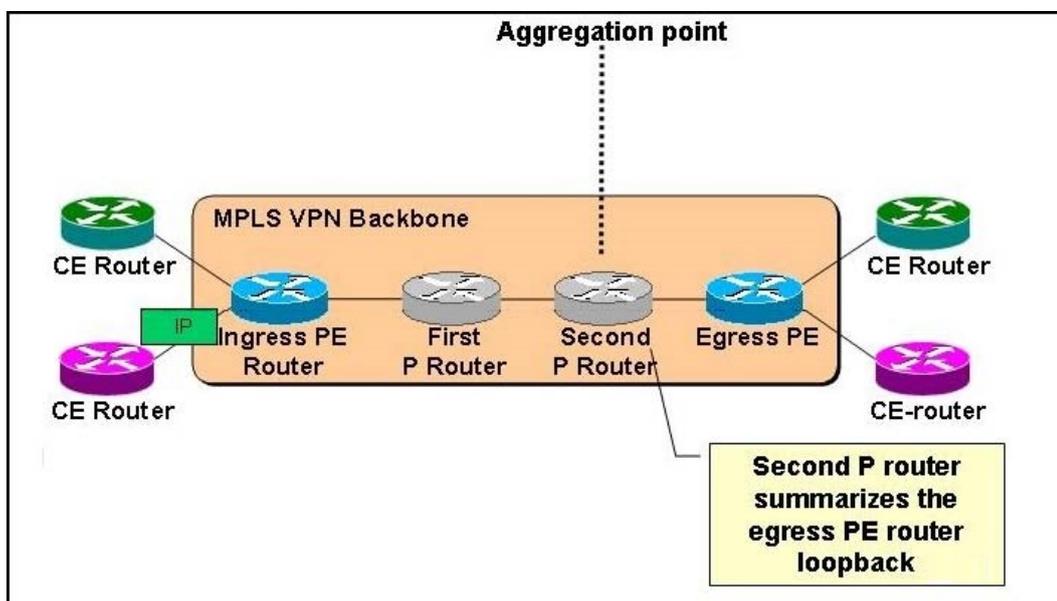
What problem can be caused by the second P router summarizing the loopback address of the egress PE router?

A. The first P router will be faced with a VPN label which it does not understand.
B. The second P router will be faced with a VPN label which it does not understand.
C. The egress PE router will not be able to establish a label switch path (LSP) to the ingress PE router.

D. A label switch path (LSP) will be established from the ingress PE router to the egress PE router, an event that is not desirable.

E. The ingress PE router will not be able to receive the VPN label from the egress PE router via MP-IBGP.

Answer: B

Explanation:

QUESTION NO: 3

In a central services topology, which routes do client VRFs contain?

A. routes from the client site, but not from the server site
B. routes from the server site, but not from the client site
C. routes from both the client site and the server site
D. only EBGP routes from either the client site or the server site

Answer: C

Explanation:

QUESTION NO: 4

On a dedicated subinterface implementation, PE-2 must establish an address-family vrf IPv4 BGP neighbor relationship with which router?

A. CE-1
B. CE-2
C. PE-1
D. PE-IG
E. CE-1 and CE-2
F. PE-1 and PE-IG

Answer: B

Explanation:

QUESTION NO: 5

What are three drawbacks of a peer-to-peer VPN using a shared provider edge (PE) router? (Choose three.)

A. A full mesh of virtual circuits is required between the customer sites.
B. All the customers have to share a common IP address space.
C. Optimal routing between customer sites cannot be guaranteed.
D. The shared PE router has to know all routes for all customers.
E. Packet filters are required on the PE routers.

Answer: B,D,E

Explanation:

QUESTION NO: 6

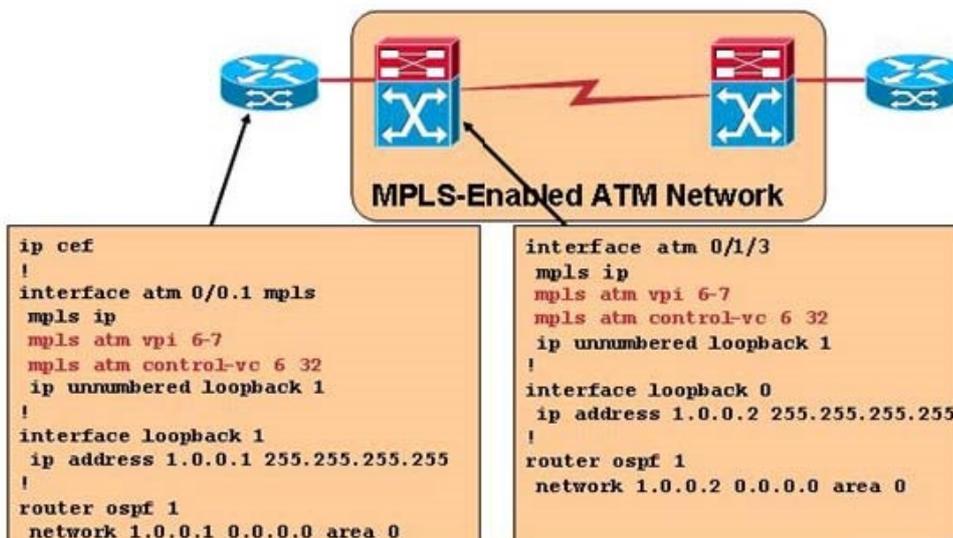Which two of the following statements regarding LDP are true? (Choose two.)

A. LDP can also be used between nonadjacent routers using multicast LDP hello messages.
B. LDP does not require periodic hello messages once the LDP session has been established between the LDP peers.
C. LDP hello messages use TCP packets with a destination port number of 646.
D. Multiple sessions can be established between a pair of LSRs if they use multiple label spaces.
E. Per-platform label space can be identified by a label space ID of 0 in the LDP identifier field.

Answer: D,E

Explanation:

QUESTION NO: 7

Refer to the exhibit.

MPLS-Enabled ATM Network

```
ip cef
!
interface atm 0/0.1 mpls
 mpls ip
 mpls atm vpi 6-7
 mpls atm control-vc 6 32
 ip unnumbered loopback 1
!
interface loopback 1
 ip address 1.0.0.1 255.255.255.255
!
router ospf 1
 network 1.0.0.1 0.0.0.0 area 0
```

```
interface atm 0/1/3
 mpls ip
 mpls atm vpi 6-7
 mpls atm control-vc 6 32
 ip unnumbered loopback 1
!
interface loopback 0
 ip address 1.0.0.2 255.255.255.255
!
router ospf 1
 network 1.0.0.2 0.0.0.0 area 0
```

Which two of the following statements about the MPLS configurations are true? (Choose two.)

A. The VPI range being configured is the default VPI range.
B. The router is missing the mpls label protocol ldp configuration command on its ATM 0/0.1 subinterface to make it an LC-ATM enabled subinterface.
C. There is a problem with the configurations because the control VC should be set to 0 32 instead.
D. The ATM switch is using VC merge since VC merge is enabled by default.
E. For MPLS label allocations, both VPI 6 and 7 can be used.

Answer: D,E
Explanation:

QUESTION NO: 8

What does the following command accomplish?

sanjose#clear ip bgp 10.1.1.1 in prefix-filter

A. The sanjose router will perform an outbound soft reconfig to the 10.1.1.1 neighbor.
B. The sanjose router will send out the ORF prefix-list so that a new route refresh will be received from the 10.1.1.1 neighbor.
C. The 10.1.1.1 router will perform an inbound soft reconfig on the updates from the sanjose neighbor.
D. The 10.1.1.1 router will send out the ORF prefix-list so that a new route refresh will be received from the sanjose neighbor.
E. The bgp session between the sanjose and the 10.1.1.1 router will be reset so that all the new bgp updates from the 10.1.1.1 router can be processed by the inbound prefix-list at the sanjose router.
F. The bgp session between the sanjose and the 10.1.1.1 router will be reset so that all the new bgp updates from the sanjose router can be processed by the inbound prefix-list at the 10.1.1.1 router.

Answer: B
Explanation:

QUESTION NO: 9

Based on the topology diagram shown in the exhibit,
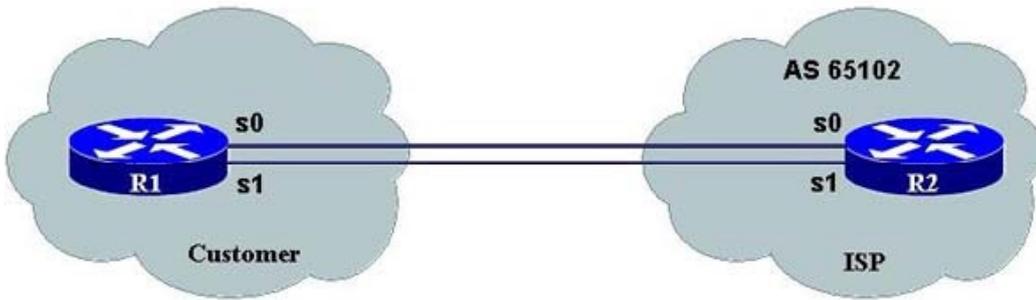
when should BGP be used as the routing protocol between the customer and the ISP?

A. If physical link failures can not be detected by the link-level procedures.
B. If the customer wants to affect how the ISP will route the customer's traffic out to the rest of the Internet.
C. If the ISP does not support static routing with the customer.
D. If the customer is using provider-assigned (PA) addresses inside the customer's network.
E. If the customer is using private addresses inside the customer's network.

Answer: A
Explanation:

QUESTION NO: 10

Based on the network diagram shown in the exhibit,
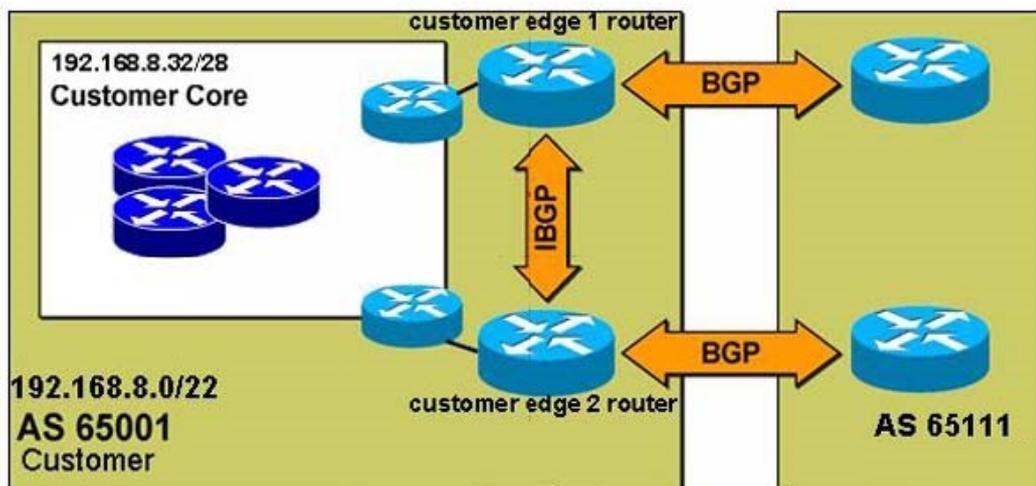
what is the correct configuration on the customer edge router used to conditionally announce the customer networks to the ISP?

A. router bgp 65001
! neighbor commands not shown
network 192.168.8.0 mask 255.255.252.0
!
ip route 192.168.8.0 255.255.252.0 192.168.8.33
B. router bgp 65001
! neighbor commands not shown
aggregate-address 192.168.8.0 255.255.252.0 summary-only
!
ip route 192.168.8.0 255.255.252.0 192.168.8.33
C. router bgp 65001
! neighbor commands not shown
network 192.168.8.0
network 192.168.9.0
network 192.168.10.0
network 192.168.11.0
!
ip route 192.168.8.0 255.255.255.0 null0
ip route 192.168.9.0 255.255.255.0 null0
ip route 192.168.10.0 255.255.255.0 null0
ip route 192.168.11.0 255.255.255.0 null0
D. router bgp 65001
! neighbor commands not shown
aggregate-address 192.168.8.0 255.255.252.0 summary-only
!
router ospf 1
network 192.168.8.0 0.0.3.255 area 0
E. router bgp 65001
! neighbor commands not shown
aggregate-address 192.168.8.0 255.255.252.0
!
ip route 192.168.8.0 255.255.252.0 null0

Answer: A
Explanation:

QUESTION NO: 11

Which two statements about a transit AS are correct? (Choose two.)

A. A transit AS has eBGP connection(s) to only one external AS.
B. Routes between ASs are always exchanged via eBGP.
C. A transit AS uses an IGP like OSPF or ISIS to propagate the external networks within the transit AS.
D. Core routers within a transit AS normally use default routing to reach the external networks.
E. iBGP sessions can be established between non directly connected routers.

Answer: B,E
Explanation:

QUESTION NO: 12

Based on the network diagram shown in the exhibit, both R5 and R6 are clients of the R2 RR.
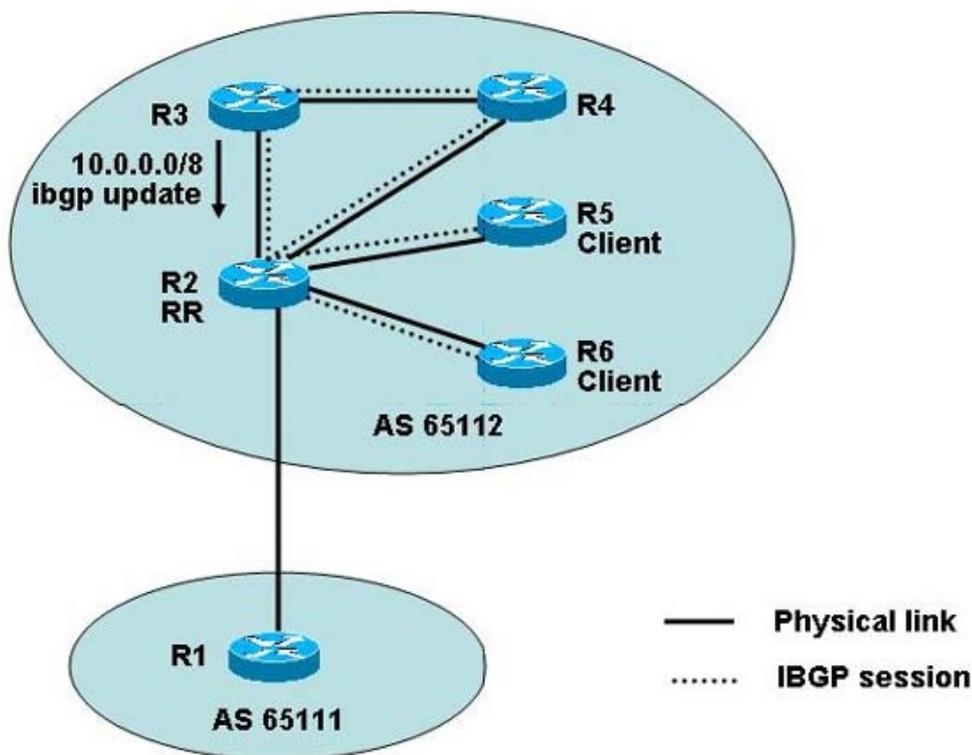
When the 10.0.0.0/8 iBGP update from R3 is received by the R2 RR, which router(s) will R2 reflect the update to?

A. R1 only
B. R5 and R6
C. R5, R6 and R1
D. R4, R5 and R6

E. R4, R5, R6 and R1
F. to no other router

Answer: C
Explanation:

QUESTION NO: 13

Which show command can be used to display the originator ID and cluster-list?

A. show ip bgp
B. show ip bgp sum
C. show ip route bgp
D. show ip route {prefix}
E. show ip bgp {prefix}
F. show ip bgp neighbors {ip address}

Answer: E
Explanation:

QUESTION NO: 14

Which command is used to configure the external, confederation-wide AS number?

A. router(config)#router bgp {as-number}
B. router(config-router)#bgp confederation peers {as-number}
C. router(config-router)#bgp confederation identifier {as-number}
D. router(config-router)#bgp cluster-id {as-number}
E. router(config-router)#neighbor {ip address} remote-as {as-number}

Answer: C
Explanation:

QUESTION NO: 15

As the penalty for a flapping route decreases and falls below a certain limit, the route is unsuppressed. What is the name of that limit?

A. half-life limit
B. suppress limit
C. max-suppress-time limit
D. reuse limit
E. unsuppress limit
F. penalty limit

Answer: D
Explanation:

QUESTION NO: 16

What is the difference in implementation between a managed CE services MPLS VPN and a central services MPLS VPN?

A. RD assignment
B. selective routes export
C. selective routes import
D. MP-BGP route redistribution filtering
E. CE-PE routing process
F. none

Answer: B
Explanation:

QUESTION NO: 17

In a Transit AS, how do the internal routers within the Transit AS forward packets destined for the external networks using a scalable solution?

A. using the default route
B. using the IGP routes where the external networks are redistributed into the IGP by the edge routers
C. using the EBGP routes where the external networks are redistributed into the IBGP by the edge routers
D. using the IBGP routes, then using recursive lookup based on IGP information to resolve the BGP next-hop

Answer: D
Explanation:

QUESTION NO: 18

Given the following configurations, R2 and R3 are not able to successfully establish the IBGP session using the loopback 0 interfaces. What could be the cause of this problem?

!

! output omitted

!

hostname R2

!

interface loopback 0

ip address 2.2.2.2

!

interface e0

ip address 10.1.1.1 255.255.255.0

no shut

!

interface e1

ip address 10.2.2.1 255.255.255.0

no shut

!

router bgp 65101

neighbor 172.16.1.1 remote-as 65100

neighbor 3.3.3.3 remote-as 65101

!

router eigrp 101

network 10.0.0.0

network 2.0.0.0

```
!
!! output omitted
!
hostname R3
!
interface loopback 0
ip address 3.3.3.3
!
interface e0
ip address 10.1.1.2 255.255.255.0
no shut
!
interface e1
ip address 10.2.2.2 255.255.255.0
no shut
!
router bgp 65101
neighbor 192.168.1.1 remote-as 65102
neighbor 2.2.2.2 remote-as 65101
!
router eigrp 101
network 10.0.0.0
network 3.0.0.0
!
```

A. The "No Sync" BGP configuration command is missing.
B. R2 and R3 are not using the loopback0 IP address as the source address for the BGP
messages to each other.
C. The "network 2.0.0.0" BGP configuration command is missing on R2 and the "network 3.0.0.0"

BGP configuration command is missing on R3.

D. The "neighbor 2.2.2.2 ibgp-multihop 2" BGP configuration command is missing on R3 and the "neighbor 3.3.3.3 ibgp-multihop 2" BGP configuration command is missing on R2.

Answer: B

Explanation:

QUESTION NO: 19

AS-Path prepending is used in AS1 in order to influence the return traffic path from AS 5 to AS 1 through the higher speed path via AS 2. _____needs to be configured for AS-Path prepending and a minimum of _____of the AS number should be prepended.

A. R1; one copy
B. R2; one copy
C. R1; two copies
D. R2; two copies
E. R2; three copies

Answer: C

Explanation:

QUESTION NO: 20

Which two configuration commands will complete the BGP configuration on R1 so it will conditionally announce the 172.0.0.0/8 prefix to R4 via BGP? (Choose two.)

hostname R1

!

!output omitted

!

1. _____

!

router bgp 65001

neighbor 172.16.1.1 remote-as 65001

neighbor 2.2.2.2 remote-as 65001

neighbor 4.4.4.4 remote-as 387

!

2. _____

!

A. 2. network 172.16.0.0
auto-summary
B. 2. network 172.0.0.0 mask 255.0.0.0
C. 1. ip route 172.0.0.0 255.0.0.0 null0
D. 1. ip route 172.0.0.0 255.0.0.0 null0 255
E. 1. ip route 172.0.0.0 255.0.0.0 172.16.1.1
F. 2. aggregate-address 172.0.0.0 mask 255.0.0.0

Answer: B,E
Explanation:

QUESTION NO: 21

In a multihomed environment with two ISP connections, which two statements are true? (Choose two.)

A. The customer should not be configured to act as a transit AS between the two ISPs.
B. It is recommended that the multi-homed customer use a registered (public) AS number.
C. AS-Path prepending can be configured on the customer's edge router to influence the BGP path selection process for the outbound traffic (traffic from the customer to the ISPs).
D. The customer can use Local Preference on the customer's edge routers to influence the BGP path selection process for the inbound traffic (traffic from the ISPs to the customer).
E. The advertisement of the customer's IP address space can be conditioned by the customer's edge routers by using a static route to the null0 interface and by using the proper network statement under router bgp.

Answer: A,B
Explanation:

QUESTION NO: 22

Which four attributes are used by BGP to detect routing loops? (Choose four.)

A. AS-Path
B. Cluster ID
C. Cluster List
D. Originator ID
E. Community ID

Answer: A,B,C,D
Explanation:

QUESTION NO: 23

Which three statements are true about route reflectors? (Choose three.)

A. If the route is learned from an EBGP peer by the route reflector, it is reflected to all IBGP and EBGP peers.
B. If the route is learned from a non-client IBGP peer by the route reflector, it is reflected to all EBGP peers only.
C. If the route is learned from a non-client IBGP peer by the route reflector, it is reflected to EBGP peers and clients only.
D. If the route is learned from a client IBGP peer by the route reflector, it is reflected to all clients only, except the originating client.
E. If the route is learned from a client IBGP peer by the route reflector, it is reflected to all EBGP peers, non-clients, and clients (except the originating client).

Answer: A,C,E
Explanation:

QUESTION NO: 24

Based on the following show ip bgp neighbors 2.2.2.2 output, which two statements are true? (Choose two.)

R1#show ip bgp neighbors 2.2.2.2

BGP neighbor is 2.2.2.2, remote AS 102, internal link

Index 1, Offset 0, Mask 0x2

BGP version 4, remote router ID 66.0.0.1

BGP state = Established, table version = 1, up for 00:14:52

Last read 00:00:52, hold time is 180, keepalive interval is 60 seconds

Minimum time between advertisement runs is 5 seconds

Received 233 messages, 0 notifications, 0 in queue

Sent 206 messages, 0 notifications, 0 in queue

Prefix advertised 0, suppressed 0, withdrawn 0

Connections established 17; dropped 16

Last reset 00:15:02, due to User reset

18 accepted prefixes consume 576 bytes, maximum limit 20

Threshold for warning message 80%

0 history paths consume 0 bytes

A. R1 has accepted 20 prefixes from the 2.2.2.2 IBGP neighbor.
B. R1 generated a warning message to the router's console after the 2.2.2.2 IBGP neighbor sent 16 prefixes to R1.
C. R1 generated a warning message to the router's console after the 2.2.2.2 IBGP neighbor sent 15 prefixes to R1.
D. R1 will drop its neighbor relationship to the 2.2.2.2 IBGP neighbor if 2.2.2.2 sends two more additional prefixes to R1.
E. R1 will drop its neighbor relationship to the 2.2.2.2 IBGP neighbor if 2.2.2.2 sends three more additional prefixes to R1.

Answer: B,E
Explanation:

QUESTION NO: 25

R2 is configured to prepend AS number 65102 in updates to R3. Which statement is true?

A. The BGP updates from R2 to R3 will be rejected by R3 due to loop prevention.
B. The EBGP session between R2 and R3 will be dropped due to an AS-Path prepend configuration error.
C. The AS-Path length via AS 65102 will increase to influence the return traffic path selected by the remote ASs.
D. The AS-Path length via AS 65102 will decrease to influence the return traffic path selected by the remote ASs.
E. The AS-Path prepend configuration command using the remote AS number (65102) will be rejected by IOS at R2.

QUESTION NO: 26

During the autonomous system number migration process, which BGP feature allows a BGP router to act as a router within one autonomous system to some BGP neighbors but also appear to be in another autonomous system to other neighbors?

A. remove-private-as
B. local-as
C. as-path prepending
D. AS override
E. Site-of-Origin (S00)

Answer: B
Explanation:

QUESTION NO: 27

Based on this configuration, which two peering router neighbor statements are correct? (Choose two.)

router bgp 50001

neighbor 192.168.1.1 remote-as 50001

neighbor 10.1.1.1 remote-as 50002

neighbor 10.1.1.1 local-as 50003

! output omitted

A. EBGP - neighbor 10.1.1.2 remote-as 50003
B. EBGP - neighbor 10.1.1.2 remote-as 50001
C. EBGP - neighbor 10.1.1.2 remote-as 50001 and neighbor 10.1.1.2 local-as 50003
D. IBGP - neighbor 192.168.1.2 remote-as 50001
E. IBGP - neighbor 192.168.1.2 remote-as 50003
F. IBGP - neighbor 192.168.1.2 remote-as 50003 and neighbor 192.168.1.2 local-as 50001

Answer: A,D

Explanation:

QUESTION NO: 28

Which configuration task requires configuring the bgp cluster-id {cluster-id} command?

A. configuring the member ASs within a BGP confederation
B. configuring the BGP confederation ID
C. configuring hierarchical BGP confederations
D. configuring redundant BGP confederations
E. configuring hierarchical route reflectors
F. configuring redundant route reflectors

Answer: F

Explanation:

QUESTION NO: 29

Which command is used to advertise a summary route while suppressing only a subset of the more specific routes?

A. network {ip prefix} {mask}
B. network {ip prefix} {mask} unsuppress-map {route-map-name}
C. aggregate-address {ip prefix} {mask}
D. aggregate-address {ip prefix} {mask} summary-only
E. aggregate-address {ip prefix} {mask} suppress-map {route-map-name}
F. aggregate-address {ip prefix} {mask} as-set summary-only

Answer: E

Explanation:

QUESTION NO: 30

Refer to the diagram.
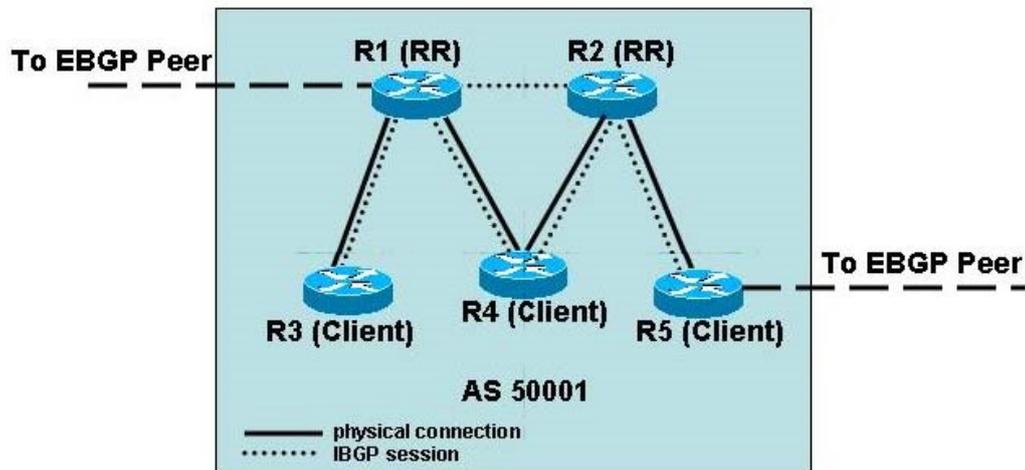
What should be changed within AS 50001 to improve the route reflector design?

A. Add a physical link between R1 and R2.
B. Add a physical link between the clients (R3 and R4, and between R4 and R5).
C. Remove the IBGP session between the two redundant RRs (R1 and R2).
D. Add an IBGP session between each pair of clients (between R3 and R4, R4 and R5).
E. Make R4 the RR and R1 and R2 its clients. R3 and R5 should be a non-RR/non-client.

Answer: A
Explanation:

QUESTION NO: 31

Based on the R1 router BGP configuration shown,

```
hostname R1
!
router bgp 50001
bgp confederation identifier 50101
bgp confederation peers 50002 50003
neighbor 10.1.1.1 remote-as 50001
neighbor 10.2.2.2 remote-as 50001
neighbor 10.3.3.3 remote-as 50001
neighbor 10.1.1.1 route-reflector-client
neighbor 10.2.2.2 route-reflector-client
neighbor 10.3.3.3 route-reflector-client
neighbor 10.4.4.4 remote-as 50002
neighbor 10.5.5.5 remote-as 50003
neighbor 192.168.100.1 remote-as 50102
neighbor 192.168.100.1 route-map setlp in
neighbor 192.168.100.1 route-map setmed out
no sync
!
```

which three statements are correct? (Choose three.)

A. R1 is in AS 50101 according to the 192.168.100.1 neighbor.
B. R1 is in AS 50101 according to the 10.1.1.1 neighbor.
C. The 192.168.100.1 neighbor must be directly connected to R1.
D. R1 is a route-reflector client.
E. The 10.4.4.4 neighbor is an EBGP neighbor.
F. BGP updates coming in from the 192.168.100.1 neighbor must be processed by the setlp route-map.

Answer: A,C,F
Explanation:

QUESTION NO: 32

What is the correct command to set the BGP scanner interval to two minutes?

A. bgp scan-time 2
B. bgp scan-time 120
C. bgp scan-time 2 60
D. The maximum scanning interval cannot exceed one minute.

Answer: D

Explanation:

QUESTION NO: 33

Given the AS-path of (51002 51003) 51001 i from the show ip bgp output, what is the origin?

A. AS 51001
B. AS 51002
C. AS 51003
D. (51002 51003)
E. IGP
F. IBGP

Answer: E

Explanation:

QUESTION NO: 34

What benefit does AToM provide to the service provider's customers?

A. By supporting Layer 2 VPNs, customers maintain control of their site-to-site routings over the WAN.
B. By supporting Layer 3 VPNs, a full mesh of virtual circuits will not be required between the different customer sites to enable optimal routing.
C. By supporting secured Layer 3 VPNs, customers do not have to deal with the complexity of configuring IPSec.
D. By supporting MPLS traffic engineering over ATM, customers can better utilize their WAN link.
E. By supporting Diff-Serv QoS, AToM allows customers to deploy voice/video applications across the WAN.

Answer: A

Explanation:

QUESTION NO: 35

What is a benefit of CEF switching?

A. CEF supports IP source prefix-based switching using the FIB.
B. CEF uses less memory than fast switching uses.
C. CEF is less CPU intensive than fast switching is.
D. CEF provides Netflow statistics with minimum CPU overhead.
E. CEF allows multiple data planes to share a common control plane.

Answer: C
Explanation:

QUESTION NO: 36

What are two concerns when implementing CEF switching? (Choose two.)

A. increased CPU utilization from maintaining the FIB table
B. increased memory requirement
C. the requirement to disable other IOS features such as NBAR and MQC
D. increased memory requirement on the VIP when implementing DCEF
E. configuration complexity
F. troubleshooting complexity because of the many tables that CEF maintains

Answer: B,D
Explanation:

QUESTION NO: 37

With MPLS VPN-aware NAT, what additional information is tracked inside the NAT translation table?

A. RD information
B. RT information
C. VRF information
D. Multi-protocol BGP prefixes
E. MPLS Labels

Answer: C
Explanation:

QUESTION NO: 38

What is the purpose of the global configuration command, ip dhcp relay information option vpn?

A. enables the DHCP relay agent to insert the VPN suboptions to the BOOTP request
B. enables the DHCP relay agent to convert the broadcast DHCP request to a unicast DHCP request to a shared DHCP server
C. enables the DHCP relay agent to perform VRF-aware NAT before forwarding the DHCP request to a shared DHCP server
D. enables ODAP (On-Demand Address Pool) on the DHCP relay agent

Answer: A
Explanation:

QUESTION NO: 39

Which of the following could be called a VPN identifier in the MPLS/VPN architecture?

A. route target
B. route distinguisher
C. VRF
D. VPN IPv4 address
E. BGP site-of-origin (SOO) extended community attribute

Answer: A
Explanation:

QUESTION NO: 40

What best describes the following configuration example of allowas-in?

router bgp 100

address-family ipv4 vrf CustomerA

neighbor 195.12.4.5 remote-as 123

neighbor 195.12.4.5 activate

neighbor 195.12.4.5 allowas-in 2

A. permits incoming BGP updates defined by access-list 2

B. permits incoming BGP updates defined by class-map 2
C. permit incoming BGP updates defined by route-map 2
D. permits incoming BGP updates with no more than two occurrences of AS 100 in the AS path
E. permits incoming BGP updates with no more than two occurrences of AS 123 in the AS path

Answer: D
Explanation:

QUESTION NO: 41

An OSPF LSA type 1 route is redistributed into MP-BGP. That same route is then redistributed back from MP-BGP into OSPF on another PE router. In this case, which LSA type on the destination CE router will the OSPF route appear as?

A. LSA type 1
B. LSA type 2
C. LSA type 3
D. LSA type 4
E. LSA type 5
F. LSA type 7

Answer: C
Explanation:

QUESTION NO: 42

Using MPLS unicast IP forwarding, what will happen if an LSR receives an unlabeled incoming packet?

A. It will process switch the packet by doing a routing table lookup.
B. It will forward the packet using the LFIB.
C. It will forward the packet using the LIB.
D. It will forward the packet using the FIB.
E. It will drop the packet immediately.

Answer: D
Explanation:

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